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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,719	06/20/2006	Claire Divoux	292628US0PCT	6614

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EXAMINER	
ALANKO, ANITA KAREN	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
07/28/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/583,719	DIVOUX ET AL.	
	Examiner	Art Unit	
	Anita K. Alanko	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *17-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/29/06;7/10/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

Applicant's election of Group I in the reply filed on May 1, 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "type" in claims 8-10 render the metes and bounds of the claims indefinite. The term may be simply deleted.

It is noted that the use of the phrase "actuation means" or "reflecting means" fails to invoke 35 USC, sixth paragraph, at least because the terms fail to cite "means for".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Mansell et al (US 6,108,121).

Mansell discloses a method for manufacturing an actuation system for an optical component, the method comprising:

etching a first face (bottom surface shown in Fig.2D, col.5, lines 44-51) of a component to form pads 36,

etching a second face of said component to expose a flexible or deformable membrane 34 made of the same material as the pads (integrally formed, col.5, lines 50-51, etching to remove layer 52, col.6, lines 11-12, to expose membrane 32 with reflective coating 48), and

producing actuation means (electrostatic, electrodes 40, col.4, lines 30-36) of the pads and membrane (including the use of electrically conductive material 42, col.6, lines 12-21).

As to claim 2, Mansell discloses thicknesses of 20 microns (col.7, line 67), or 10 microns (col.7, lines 19-20), which are within the ranges cited.

As to claim 4, Mansell discloses that the component is made from semiconducting material (silicon or other semiconductor material, col.4, line 64-67), and is provided with a surface layer of semiconducting material in which the pads and membrane are etched (col.5, lines 52-65).

As to claim 5, Mansell discloses that a SOI type component may be used (col.11, lines 27-37) which includes the membrane and pads being made in surface silicon layer.

As to claims 8-9, 11-13, Mansell discloses electrical, piezoelectric or thermal expansion type actuating means (col.2, lines 40-50, Fig.20-21).

As to claim 16, Mansell discloses to form reflecting means 48 on the membrane (Fig.2A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 6-7, 14-15, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansell et al (US 6,108,141).

The discussion of Mansell from above is repeated here.

As to claims 3, 14-15 and 27, Mansell fails to disclose the total thickness of the membrane and pads, a width base of less than 2 microns, a height/width ratio of less than 20, and a membrane thickness of 1-5 microns. However, Mansell teaches that the exact dimensions of each element may be varied to tailor the mirror to the specific application required (col.14, lines 56-58). The thickness of the membrane and pads, width, h/w ratio and membrane thickness affect the response of the mirror, and thus appear to reflect a result-effective variables. It would

have been obvious to one with ordinary skill in the art to vary the thicknesses and ratio to the ranges cited because Mansell teaches to vary as desired tailor the mirror to the specific application required, and because the thicknesses and ratio appear to reflect a result-effective variable which can be optimized. See MPEP 2144.05 IIB.

As to claim 6, it would have been obvious to one with ordinary skill in the art to include the membrane and pads as cited because such materials are useful semiconductor materials, and Mansell teaches to etch structures in the substrate according to the characteristics of the mirror desired in the final product.

As to claim 7, Mansell discloses to dope with boron to control the thickness of the membrane (col.5, liens 1-13). It would have been obvious to one with ordinary skill in the art to vary the doping as cited because Mansell teaches that the doping provides a means to control thickness of elements present, and Mansell teaches to vary thicknesses to obtain a final mirror product with the desired characteristics.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mansell et al (US 6,108,141) in view of Costello et al (US 5,357,825).

The discussion of Mansell from above is repeated here.

As to claim 10, Mansell fails to disclose magnetic actuation means. Costello teaches that magnetic means is a useful alternative to electrostatic or piezoelectric means (as in Mansell) in order to actuate a mirror (col.4, lines 61-67). It would have been obvious to one with ordinary skill in the art to include magnetic actuation means in the method of Mansell because Costello

teaches that it is a useful alternative to electrostatic or piezoelectric means in order to actuate a mirror.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anita K Alanko/
Primary Examiner, Art Unit 1792